B1 Cont.

a transmitter for transmitting the QPSK waveform produced by said QPSK waveform generator.

17. (Twice Amended) A method comprising the steps of:

(a) providing a carrier signal comprising in-phase (I) and quadrature (Q) components;

B2

(b) providing a data signal comprising I and Q components and biasing the I and Q components of the data signal with at least one offset comprising a spreading waveform; and

(c) combining the I and Q components of the carrier signal with the biased I and Q components of the data signal, respectively, to produce a quadrature phase shift keyed (QPSK) waveform.

23. (Twice Amended) A method comprising the steps of:

B3

(a) receiving a quadrature phase shift keyed (QPSK) waveform having in-phase (I) and quadrature (Q) components of a carrier modulated with I and Q components of a data signal, at least one of the I and Q components of the data signal being biased by an offset comprising a direct current (DC) offset voltage; and

(b) conducting non-regenerative recovery of the QPSK waveform received in step (a) to extract said carrier signal based upon the offset.

27. (Amended) A method of transmitting information comprising the steps of:

B4

providing a data signal representative of the information and comprising in-phase (I) and quadrature (Q) components;

biasing at least one of the I and Q components with an offset comprising a direct current (DC) offset;

generating a quadrature phase shift keyed (QPSK) waveform based upon a carrier signal and the at least one biased component; and

transmitting the QPSK waveform.

B4 Cont.

20 ~~28~~. (Amended) A method according to claim 17 ~~23~~, wherein the at least one offset comprises a respective offset for each of the I and Q components of the data signal.

Please add the following claims:

21 ~~29~~. (New) A method of transmitting information comprising the steps of:

providing a data signal representative of the information and comprising in-phase (I) and quadrature (Q) components;

biasing at least one of the I and Q components with an offset comprising a spreading waveform;

generating a quadrature phase shift keyed (QPSK) waveform based upon a carrier signal and the at least one biased component; and

B5

transmitting the QPSK waveform.

22 ~~30~~. (New) A method according to Claim 21 ~~29~~, further including the steps of:

receiving the transmitted QPSK waveform; and

processing the received QPSK waveform to extract said carrier signal therefrom.

23 ~~31~~. (New) A method according to Claim 22 ~~30~~, further including the step of:

processing the received QPSK waveform using the carrier signal extracted therefrom to derive said data signal.

24 23
32. (New) A method according to Claim 31, wherein said data signal is encoded with a forward error correction code, and further including the step of decoding the encoded data signal to recover said information from said data signal.

25 24
33. (New) A method according to Claim 32, wherein said forward error correction code is one capable of extending error rate performance to a value of energy per bit to noise density ratio (E_b/N_o) less than 4 dB.

B5 cont.

26 25
34. (New) A method according to claim 33, wherein generating the QPSK waveform comprises multiplying the carrier signal with the digital signal.

27
35. (New) A communication system comprising:

a quadrature phase shift keyed (QPSK) waveform generator for generating a QPSK waveform based upon a carrier signal and a data signal, the data signal being representative of information to be transmitted and comprising I and Q components, and said QPSK waveform generator biasing at least one of the I and Q components with an offset prior to generating the QPSK waveform, the offset comprising a spreading waveform; and

a transmitter for transmitting the QPSK waveform produced by said QPSK waveform generator.

28
36. (New) A communication system according to Claim 27 35, further including a receiver which is operative to receive said QPSK waveform and to extract said carrier signal therefrom.